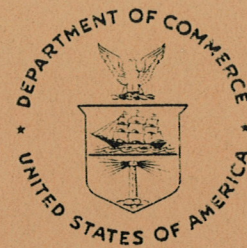


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no. 87-3



NOAA Techniques Development Laboratory Computer Program NWS TDL CP 87-3

PB 88-1 125588

FORECAST REVIEW

Silver Spring, Md.
July 1987

**U.S. DEPARTMENT OF
COMMERCE**

National Oceanic and
Atmospheric Administration

National Weather
Service

PREFACE

The Techniques Development Laboratory's (TDL's) computer program (CP) series is a subset of TDL's technical memorandum series. The CP series documents computer programs written at TDL primarily for the Automation of Field Operations and Services (AFOS) computers.

The format for the series follows that given in the AFOS Handbook 5, Reference Handbook, Volume 6: Applications Programs, Part 1: Policy and Procedures, published by the Office of Technical Services/AFOS Operations Division.

NOAA Techniques Development Laboratory Computer Program NWS TDL

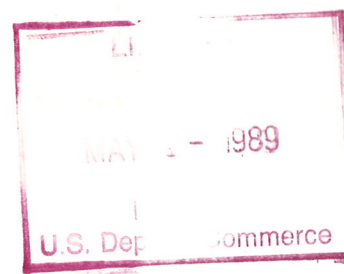
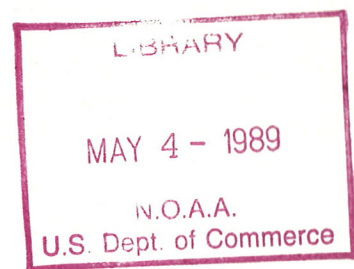
- CP 83-1 Cross Sectional Analysis of Wind Speed and Richardson Number. Gilhousen, Kemper, and Vercelli, May 1983. (PB83 205062)
- CP 83-2 Simulation of Spilled Oil Behavior in Bays and Coastal Waters. Hess, October 1983. (PB84 122597)
- CP 83-3 AFOS-Era Forecast Verification. Heffernan, Newton, and Miller, October 1983. (PB84 129303)
- CP 83-4 AFOS Monitoring of Terminal Forecasts. Vercelli, December 1983.
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- CP 84-1 AFOS Display of MDR Data on Local Map Background. Newton, July 1984.
- CP 84-2 AFOS Surface Observation Decoding. Perrotti, September 1984.
- CP 84-3 AFOS-Era Forecast Verification. Miller, Heffernan, and Ruth, September 1984.
- CP 85-1 AFOS Monitoring of Terminal Forecasts. Vercelli and Norman, May 1985.
- CP 85-2 AFOS Terminal Forecast Decoding. Vercelli, Norman, and Heffernan, October 1985.
- CP 85-3 AFOS-Era Forecast Verification. Ruth, Miller, and Heffernan, October 1985.
- CP 87-1 AFOS Terminal Aerodrome Forecast Formatting. Wantz and Eggers, July 1987.
- CP 87-2 AFOS-Era Forecast Verification. Ruth and Alex, July 1987.

NOAA Techniques Development Laboratory Computer Program NWS TDL CP 87-3

FORECAST REVIEW

Wendy L. Wolf

Techniques Development Laboratory
Silver Spring, Md.
July 1987



UNITED STATES
DEPARTMENT OF COMMERCE
Secretary of Commerce

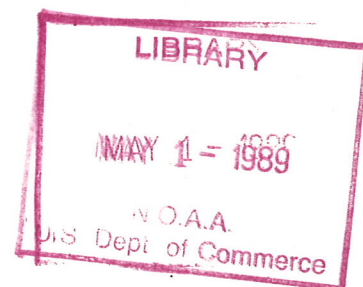
National Oceanic and
Atmospheric Administration
Anthony J. Calio, Under Secretary

National Weather Service
Richard E. Hallgren
Assistant Administrator



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FORECAST REVIEW

Wendy L. Wolf

1. INTRODUCTION

The Forecast Review program facilitates the review and evaluation of public forecasts for individual stations and forecast periods. Previously, in order to analyze the progression of forecasts for a particular period, it was necessary for the forecaster to locate and view a large number of separate products. This software concisely displays forecasts for a specific forecast period from several forecast cycles along with the corresponding observed weather elements. With two products viewed side by side on two display modules, the Forecast Review output gives data which can be used to compare MOS and WSFO forecasts, to compare these forecasts with recorded observations, and to evaluate the consistency of these forecasts from one cycle to another leading up to an actual event. This software, while not providing the user with any new information, is designed to be useful for evaluating the quality and consistency of the public forecast, especially from a management standpoint.

2. METHODOLOGY AND SOFTWARE STRUCTURE

The Forecast Review software consists of two programs: SETUP and FORREV. SETUP is designed to be run once as an initialization procedure for program FORREV. It allows the user to define the WSFO identifier and the possible stations for which he/she may request forecast reviews. FORREV can be run any time, allowing managers and forecasters to review both day and evening forecasts. Fig. 1 presents the overall data and program flow for the Forecast Review software.

A. SETUP

SETUP is run once at the user's Dasher to initialize an RDOS disk file, FORREV.DA, for use by program FORREV. SETUP interactively requests the WSFO identifier (ccc) and any stations (xxx) within the WSFO area for which the user may want to run FORREV. The list of stations is used as a check in FORREV to assure that a valid station has been entered for forecast review.

For complete output from FORREV, the stations (xxx) entered must be ones for which data are being collected and collated by the local AFOS-Era Forecast Verification (AEV) software (see Ruth and Alex, 1987). This requirement is essential because FORREV makes use of AEV output data in composing an output forecast review table. If FORREV is run for stations that the AEV software is not being run for, an optional switch must be used to not produce the tabular output display (see Section 3 below). If run at a headquarters site, the user should enter the ccc corresponding to his/her site and any stations (xxx), from any WSFO area, for which he/she may want to run FORREV in the future. A sample run of SETUP at the Dasher is shown in Fig. 2.

B. FORREV

FORREV is the main driver program which produces two output products, cccTXTREV and cccTBLREV, which allow the user to review forecasts made for a specified forecast period. The overall program structure of FORREV is shown in Fig. 3.

Prior to running FORREV, the user must specify the date and time of the forecast period to be reviewed and up to three stations whose forecasts are to be reviewed during this run. To do this, the user may enter these run specifications manually into a preformatted product, cccRUNREV (see Fig. 4). Alternatively, he/she may specify a switch on the command line (see Section 3 below) which indicates that cccRUNREV should be automatically updated by the software to the next forecast cycle.

FORREV begins with a call to subroutine RDSWCH which reads switches on the command line. For a detailed explanation of the various switches available for use, see Section 3 below. Next, subroutine RP reads AFOS product cccRUNREV containing the user's run specifications. If this product is to be updated automatically, calls to routines UPCYC and CALCYC are made.

Calls to subroutine SETOUT allow disk files for the two output products to be created and to have the correct header lines written to them. Disk file TXT.DA contains the product which will be stored as cccTXTREV in the AFOS data base. Disk file TBL.DA similarly contains the product cccTBLREV.

Next, for each of the three (or less) specified stations, calls to the two main driver subroutines, TXTDRV and TBLDRV, are made. TXTDRV is the routine which creates output product cccTXTREV (see Fig. 5). The purpose of this routine is to search through all cccLFPxxx products in the user's data base and to locate all forecasts made for the specified forecast period being reviewed. Much of the code in this routine and its associated subroutines is concerned with interpreting the period designator of each forecast in every cccLFPxxx product in the user's data base.

DATEDAY determines the day of the week of the user specified date, while FNDDAY compares the day of the week written in the period designator to the one being searched for. If a forecast for the correct day of the week is located and the correct time of day (day/night) also determined, this forecast is written out to disk file TXT.DA. FNDDAY will also recognize as correct a period designator containing the name of a major holiday, if the user specified date corresponds to one of these major holidays: NEW YEARS DAY, MEMORIAL DAY, FOURTH OF JULY, LABOR DAY, THANKSGIVING, and CHRISTMAS. Only the following holiday period designators will be recognized:

```
. (holiday) ...  
. (holiday) WEEKEND...  
.OUTLOOK FOR (holiday) ...  
.OUTLOOK FOR (holiday) WEEKEND...
```

where (holiday) may contain the name of a holiday, as written above. Holiday weekend forecasts are only included in forecast reviews for the day and night forecast period of the date on which the holiday falls. This process is repeated for every stored version of cccLFPxxx in the user's data base. The

resulting output product (see Fig. 5) is a running sequence of LFP forecasts, for a given period taken from successively earlier projections.

Driver subroutine TBLDRV is the routine which creates output product cccTBLREV (see Fig. 6). The purpose of this routine is to present, in tabular form, MOS and WSFO forecast values of temperature, PoPT, and PoP from four successive projections with the actual observed values of these and other forecast elements. TBLDRV accesses this information from RDOS files VERDIR, VERIT, and VERccc (cccVERDIR, cccVERIT, and VERccc for a headquarters site) produced by AEV software program VERIFY (Ruth and Alex, 1987). For this reason, VERIFY must be run regularly, up to and including the cycle for the forecast period being reviewed. Again, all data provided in output product cccTBLREV are taken directly from information provided by program VERIFY.

TBLDRV calls routine RDVERCC to read in the data produced by program VERIFY, which is displayed in the Public Verification Matrix, cccPVMxxx. These data are accessed from RDOS file VERccc. The routine DATES determines which cycles of data displayed in the Verification Matrix need to be accessed in order to provide forecast values for four successive projections. If data are missing in RDOS file VERccc (these fields will appear as blanks in the Verification Matrix), they will appear as blank fields in output product cccTBLREV. For example, if observed data are missing in VERccc at the time FORREV is run, these data will not appear in the output product. The solution is to rerun VERIFY at a later time within the cycle when these data will be included in the Verification Matrix and VERccc, and subsequently to rerun FORREV. Subroutine TRANS is used in writing forecast data to TBL.DA in the tabular format of product cccTBLREV.

3. USE OF SWITCHES

Several options are available for variations in the way FORREV is run. These options are entered through different switches on the command line -

RUN: FORREV/D/T ccc/H

Explanation of switches:

- 1) /D - This switch allows the program to be run without requiring the user to fill out preformat cccRUNREV prior to each run of FORREV. When this switch appears on the command line, the program will automatically update cccRUNREV to the next forecast cycle. This cycle and those stations previously entered in the preformat will be used by the software in preparing the forecast reviews. (Note: product cccRUNREV is still accessed by FORREV and must be filled out prior to the first run of FORREV after the software is installed.) This switch would be most useful for those who plan to run FORREV twice daily, on a regular basis. Run in this way, it is possible for the program to be initiated from a procedure, perhaps after each run of VERIFY has completed. Those users who plan to run FORREV only occasionally, to review a particular forecast period of interest to them, will not want to use this switch.
- 2) /T - Use of this switch will cause only product cccTXTREV to be produced. Product cccTBLREV will not be created. This text-only switch was designed

to be used by those sites who do not have files VERIT, VERDIR, and VERccc available to them. Headquarters sites which are not running program VERIFY will want to use this switch.

- 3) ccc/H - This switch must be used if the program is run at a headquarters site. FORREV will produce forecast reviews for stations covered by WSFO ccc. Headquarters sites not running VERIFY will want to use this switch in combination with /T, explained above.

4. CAUTIONS AND RESTRICTIONS

Program FORREV accesses several past versions of cccLFPxxx for each station (xxx) whose forecast is being reviewed. At least four versions previous to the cccLFPxxx issued during the forecast period being reviewed should be stored in the AFOS data base. FORREV searches through all versions of cccLFPxxx in the data base for the day of the week ("MONDAY", "TUESDAY", etc.) corresponding to the date of the specified forecast period. Therefore, FORREV will not produce correct results if more than one week of LFP's are in the user's data base. It is recommended that at least 10 versions of cccLFPxxx be stored in the data base in order to produce meaningful output results.

To determine whether a given LFP forecast corresponds to the forecast period being reviewed, the period designator of the LFP forecast must be interpreted. In dealing with forecast reviews for a holiday, only period designators using the following holiday names will be recognized: "NEW YEARS DAY", "MEMORIAL DAY", "FOURTH OF JULY", "LABOR DAY", "THANKSGIVING", and "CHRISTMAS". No other holidays will be considered. In addition, forecast reviews for dates corresponding to days just preceding or following a holiday date will not include those LFP forecasts given within a holiday weekend forecast.

Because output product ccctBLREV displays data retrieved from RDOS files VERDIR, VERIT, and VERccc produced by VERIFY, it is essential that the data in these files be kept up to date. This requires running program VERIFY regularly, up to and including the cycle of the forecast period being reviewed. If data in these files are missing, corresponding fields will appear as blanks in ccctBLREV. Those sites not running VERIFY must run FORREV with the /T switch which causes ccctBLREV not to be produced.

Finally, the method used to determine the day of the week from the user specified date (performed in subroutine YMDDAY) will remain valid only through the year 1999. After this time, the subroutine will require modification.

5. REFERENCES

- Ruth, D. P., and C. L. Alex, 1987: AFOS-ERA forecast verification. NOAA Techniques Development Laboratory Computer Program, NWS TDL CP 87-2, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, 50 pp.

6. PROGRAM INFORMATION AND PROCEDURES FOR INSTALLATION AND EXECUTION

I. SETUP - INITIALIZATION FOR FORECAST REVIEW

PART A: PROGRAM INFORMATION and INSTALLATION PROCEDURE

PROGRAM NAME: SETUP

AAL ID: DBC078

Revision No.: 02.01

PURPOSE: This program sets up a data file containing the WSFO identifier (ccc) of the program user and a list of all possible stations for which he/she may wish to create forecast reviews. FORREV uses this data file to determine the WSFO identifier of products to be accessed, and as a check to ensure that the user has not entered an invalid station (xxx) to be reviewed.

Users at a headquarters site should enter the ccc of their site, not that of the WSFO area for which they are preparing the forecast review. They should then enter all possible stations (xxx), from all WSFO's, for which they might want to run FORREV.

PROGRAM INFORMATION:

Development Programmer(s):

Wendy L. Wolf

Location: Techniques
Development Laboratory

Phone: FTS - 427-7775

Language: FORTRAN IV/Rev 5.20

Save file creation dates: SETUP.SV

Original release/Rev 01.00

First revision/Rev 02.00

Second revision/Rev 02.01

Running time: Approx. 2 minutes

Disk space: Program files
Data files

Maintenance Programmer(s):

Wendy L. Wolf

Location: Techniques
Development Laboratory

Phone: FTS - 427-7775

Type: Standard

- September 22, 1986

- June 30, 1987

- July 23, 1987

- 19 RDOS blocks
- 1 RDOS block

PROGRAM REQUIREMENTS

Program files:

NAME

SETUP.SV

Data files:

NAME

Disk location

READ/WRITE

COMMENTS

FORREV.DA Master

Directory

W

Created by SETUP

LOAD LINE

RLDR SETUP UTIL.LB SYS.LB FORT.LB

PROGRAM INSTALLATION

1. The program SETUP.SV must be on or linked to the master directory on AFOS.
2. Be prepared to give your WSFO or site identifier (ccc) and all stations (xxx) for which you want to run FORREV.

SETUP - INITIALIZATION FOR FORECAST REVIEW

PART B: PROGRAM EXECUTION and ERROR CONDITIONS

PROGRAM NAME: SETUP

AAL ID: DBC078
Revision No.: 02.01

PROGRAM EXECUTION

1. From the Dasher enter:

SETUP

2. Enter answers to all questions asked.

3. After completion, enter:

TYPE FORREV.DA

to ensure that you have entered all data correctly. If not,
rerun SETUP.

ERROR CONDITIONS

DASHER MESSAGES

MEANING

1. "ERROR CREATING FILE"

Problem in creating file
FORREV.DA

2. "ERROR IN GCHN"

Problem finding a free
channel

3. "ERROR OPENNING FILE"

Problem in opening file
FORREV.DA

4. "ERROR IN WRL"

Problem writing a line of
data to file FORREV.DA

II. FORECAST REVIEW

PART A: PROGRAM INFORMATION and INSTALLATION PROCEDURE

PROGRAM NAME: FORREV

AAL ID: DBC078

Revision No.: 02.01

PURPOSE: Allows the forecaster to evaluate the consistency of a forecast up to the event. Given a user-specified forecast period, the program displays textual output providing a running sequence of LFP forecasts for that period from successively earlier forecast cycles. In addition, data displayed in tabular form presents WSFO and MOS forecast values along with actual observed values.

PROGRAM INFORMATION:

Development Programmer(s):

Dan Elliot
Wendy L. Wolf

Maintenance Programmers:

Wendy L. Wolf

Location: Techniques
Development Laboratory

Location: Techniques
Development Laboratory

Phone: FTS - 427-7775

Phone: FTS - 427-7775

Language: FORTRAN IV/Rev 5.20

Type: Standard

Save file creation dates: FORREV.SV

Original Release/Rev 01.00

- October 14, 1986

First Revision/Rev 02.00

- June 29, 1987

Second Revision/Rev 02.01

- July 13, 1987

Running time: 1 minute 10 seconds, for 3 stations

Disk space: Program files
Data files

- 88 RDOS blocks
- 12 RDOS blocks

PROGRAM REQUIREMENTS

Program files:

NAME

FORREV.SV

Data Files:

<u>NAME</u>	<u>Disk location</u>	<u>READ/WRITE</u>	<u>COMMENTS</u>
FORREV.DA	Master Directory	R	Created by SETUP
TXT.DA	Master Directory	W	Temporary -- Created by FORREV

TBL.DA	Master	W	Temporary - Created
	Directory		by FORREV
RUNREV	Master	W	Temporary - Created
	Directory		by FORREV to update
			cccRUNREV
VERDIR	Master	R	Created by AEV
	Directory		program VERIFY
VERIT	Master	R	Created by AEV
	Directory		program VERIFY
VERccc	Master	R	Created by AEV
	Directory		program VERIFY

AFOS Products:

<u>ID</u>	<u>ACTION</u>	<u>COMMENTS</u>
cccRUNREV	Read	Use m:RUNREV to enter run specifications prior to running FORREV
cccTXTREV	Stored	Created by FORREV; use cccTXTREV to display
cccTBLREV	Stored	Created by FORREV; use cccTBLREV to display

LOAD LINE

RLDR FORREV RP RDFIL RDSWCH SETOUT OPNVER RVRDR RIVT CALCYC UPCYC
YMMDAY EQUIVDY DATEDAY CKEY AFDTIM NAFREAD LFPOUT CHKPROD TIMLN
DCMPR STRING FNDPER EOPROD GPRV GETN HCHK SDAY SRCHLN FNDDAY BLKLN
HOLIDAY TXTDRV FNDSTA RDVERCC DATES TRANS CPTYP CONVERT IUANDEC
TBLDRV BG.LB UTIL.LB FORT.LB SYS.LB AFOSE.LB

PROGRAM INSTALLATION

1. The program FORREV.SV must be on or linked to the master directory on AFOS.
2. Data file FORREV.DA, created by SETUP.SV, must be on or linked to the master directory on AFOS.
3. Products cccMCPRUN, cccTBLREV, cccTXTREV, and cccRUNREV must be entered in the user's PIL or wish list. (For Headquarters sites, use the ccc of the WSFO for which you want to run FORREV in cccTBLREV, cccTXTREV, and cccRUNREV, and use the ccc of your site in cccMCPRUN.)
4. Store preformat cccMCPRUN into the AFOS data base.

This is done by entering at the AFOS console:

STORE:DP#:CCCMCPRUN cccMCPRUN

Designate that these preformats are to be "fields only" by entering:

KEY:cccMCPRUN o=1

5. RDOS files VERIT, VERDIR, and VERccc must be on or linked to the master directory on AFOS. These files are created by the AEV program VERIFY (see Ruth and Alex, 1987). VERIFY must be run twice daily on a regular basis to provide complete output results from FORREV.SV. If program VERIFY is not presently being run at your site, as is the case for most headquarters sites, use the /T switch when running FORREV to produce cccTXTREV only.
6. FORREV.SV accesses several past versions of cccLFPxxx for each station whose forecast is being reviewed. At least four versions previous to the LFP issued during the forecast period being reviewed should be stored in the AFOS data base. Storing at least 10 versions of cccLFPxxx is recommended.
7. A procedure has been created which runs program FORREV.SV and displays the two output products. If the user wishes to make use of this procedure, it must be stored into the AFOS data base. To do this, enter at the AFOS console:

STORE:DP#:TDLPCD024 cccPCD###

The user may name the procedure anything he/she wishes. A suggestion is "REVIEW". To name the procedure, enter:

PROCEDURES:

R:

###=REVIEW

The procedure must be edited to allow it to display products cccTBLREV and cccTXTREV. To edit, enter:

E:P/REVIEW

On line 1, edit the RUN: command line to include the switches that you would like to run the program with. On lines 3 and 4, edit product names to reflect your WSFO identifier.

8. Run initialization program SETUP.SV.
9. Steps 3, 5-7 must be repeated any time the user wishes to run FORREV.SV for stations with a different WSFO identifier. This would be the case for use at a headquarters site.

FORECAST REVIEW

PART B: PROGRAM EXECUTION and ERROR CONDITIONS

PROGRAM NAME: FORREV

AAL ID: DBC078

Revision No.: 02.01

PROGRAM EXECUTION

1. Be sure that AEV program VERIFY has been run regularly up to and including the cycle for the forecast period you wish to have reviewed. If the output from VERIFY, as displayed in the Public Verification Matrix, is incomplete, FORREV will execute properly; however, output in cccTBLREV will likewise be incomplete.
2. From the AFOS console enter:

M:RUNREV

Complete the preformatted product, entering the appropriate run specifications. For example, to review forecasts given by stations BWI, ROA, and WBC for the day of September 16, 1986, the user would fill out the preformat as follows:

ENTER DATE OF FORECAST REVIEW: (MMDDYY) [091686]

ENTER TIME INDICATOR: (NIGHT=N, DAY=D) [D]

ENTER STATIONS: (XXX) [BWI] [ROA] [WBC]

Store the preformat when completed.

If FORREV is run with the /D switch, this preformat does not have to be filled out prior to each run. Using the /D switch will cause the software to automatically update this preformat to the next forecast cycle. Thus, once you have initialized the preformat with a starting forecast cycle and the stations for which you wish to make reviews, the program may be run automatically (as in a procedure) and the preformat no longer has to be filled out.

3. To run FORREV without the provided procedure, enter at the AFOS console:

RUN:FORREV/D/T ccc/H

Definition of switches:

/D - Default to next forecast cycle. The program will automatically update cccRUNREV to the next later forecast cycle. This new cycle and those stations previously entered in the preformat will be used in preparing the forecast reviews.

- /T - Only product cccTXTREV is created. This switch is most useful for running the program at a headquarters site where VERIFY is not run.
- ccc/H - For use at a headquarters site. FORREV will produce forecast reviews for stations covered by WSFO ccc.

The alarm/alert is triggered upon completion; striking the alarm/alert results in display of a message indicating an error condition or successful completion. Successful completion is indicated by "JOB FORREV COMPLETED - PRODUCT TXTREV STORED" and "JOB FORREV COMPLETED - PRODUCT TBLREV STORED".

To display output:

ccctBLREV - at ADM or GDM enter: ccctBLREV
ccctXTREV - at ADM or GDM enter: ccctXTREV

4. To run FORREV with the provided procedure, enter at the AFOS console:

"REVIEW"

This procedure runs FORREV and displays the output products.

Wait for the ADM alarm/alert messages indicating that the program has completed. If the program aborts unsuccessfully, enter CTRL-Z to terminate the procedure. Entering 'C' for continue will cause the two output products to be displayed. ccctBLREV will be displayed on the ADM while ccctXTREV will be displayed on the GDM. If the ADM only is available to the user, he/she may wish to run FORREV without this procedure.

ERROR CONDITIONS

If an error occurs in TXTDRV, the subroutine producing ccctXTREV, FORREV will continue its run, producing ccctBLREV only. If an error occurs in TBLDRV, the subroutine producing ccctBLREV, FORREV will continue its run, producing ccctXTREV only.

<u>ADM MESSAGES</u>	<u>MEANING</u>
1. JOB FORREV ABORTED - ERROR CONDITION: BAD PREFORMAT	Problem reading preformat cccrUNREV from data base.
2. JOB FORREV ABORTED - ERROR CONDITION: INVALID TIME	Some character other than 'D' or 'N' was entered for the time designator in the pre- execution preformat cccrUNREV.
3. JOB FORREV ABORTED - ERROR CONDITION: INVALID STA	A station code (xxx) entered in preformat cccrUNREV does not correspond to any of the stations entered in the initialization program SETUP.

- | | |
|--|--|
| 4. JOB FORREV ABORTED -
ERROR CONDITION: BAD DATE | A date MMDDYY that the program cannot interpret has been entered in the pre-execution preformat cccRUNREV. |
| 5. JOB FORREV ABORTED -
ERROR CONDITION: UPDATE PREFORM | Problem producing updated version of cccRUNREV. |
| 6. JOB FORREV ABORTED -
ERROR CONDITION: BAD DATA | Problem accessing file FORREV.DA. Rerun SETUP. |
| 7. JOB FORREV ABORTED -
ERROR CONDITION: READING VERIT | Problem accessing RDOS file VERIT. |
| 8. JOB TXTDRV NOT ABORTED -
ERROR CONDITION: BAD LFP PROD | Bad version of a cccLFPxxx has been accessed. TXTDRV skips this version and continues. |
| 9. JOB TXTDRV ABORTED -
ERROR CONDITION: READING ERROR | TXTDRV had problem accessing cccLFPxxx from data base. FORREV continues to produce product cccTBLREV. |
| 10. JOB TXTDRV ABORTED -
ERROR CONDITION: PREVIOUS VERS | TXTDRV had a problem accessing some previous version of a cccLFPxxx product. Check for a flawed product, purge it, and rerun FORREV. |
| 11. JOB TBLDRV ABORTED -
ERROR CONDITION: NON AEV STA | Station being reviewed is not currently being verified with AEV program VERIFY. FORREV continues to produce product cccTXTREV. |
| 12. JOB TBLDRV ABORTED -
ERROR CONDITION: READ VERCCC | Problem reading VERccc file in TBLDRV. See Ruth and Alex, 1987, for how to restore this file. |

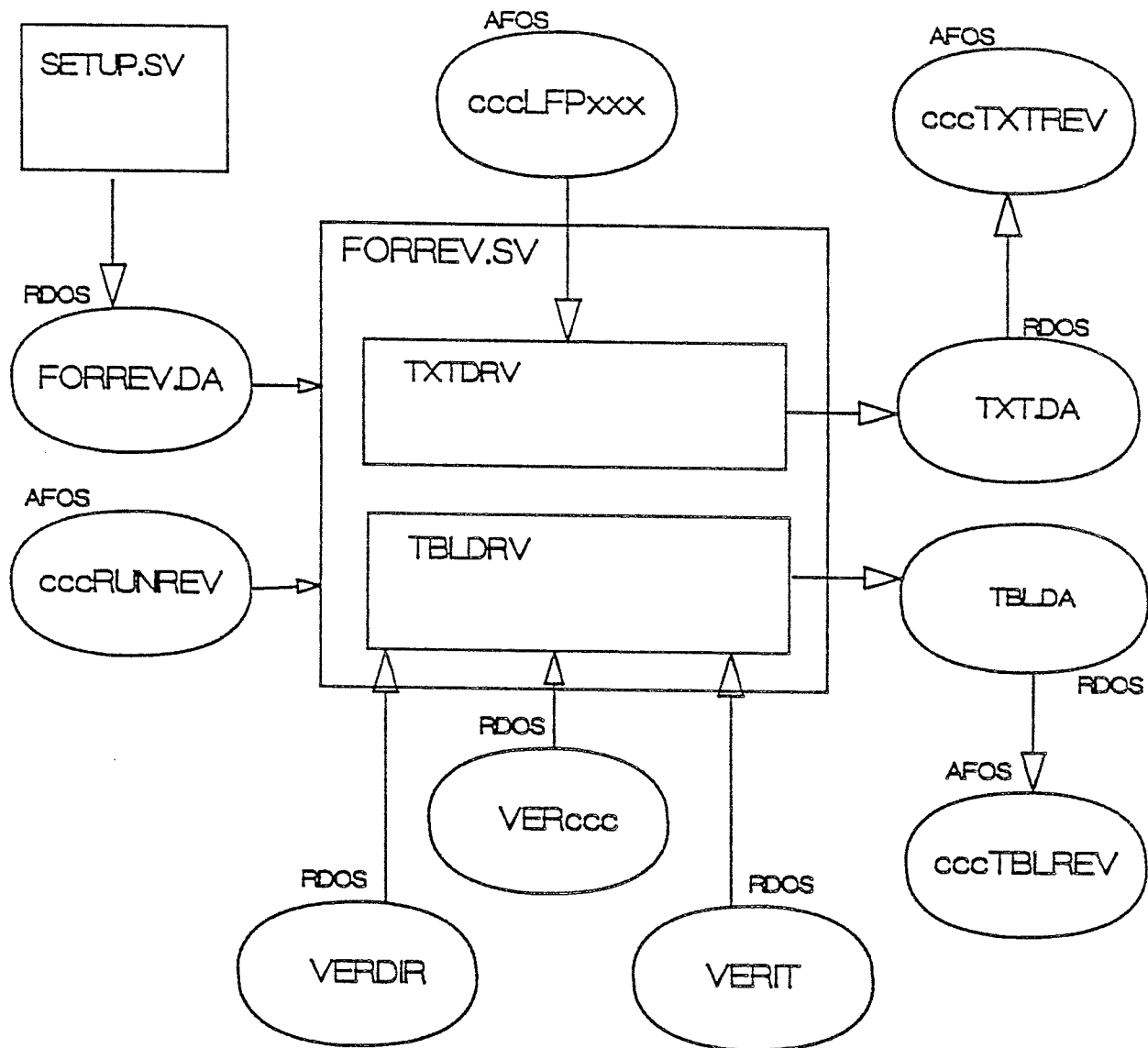


Figure 1. Data and program flow for the Forecast Review software.

```
SETUP
ENTER THREE LETTER CODE, CCC, OF SITE AT WHICH
YOU ARE RUNNING PROGRAM FORREV.
WBC
DETERMINE ALL POSSIBLE STATIONS FOR WHICH YOU MAY WANT
TO RUN FORREV.  FOR COMPLETE OUTPUT FROM FORREV, THESE
STATIONS SHOULD BE ONES FOR WHICH THE AFOS ERA VERIFICATION
PROGRAM, VERIFY, IS BEING RUN.
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
WBC
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
ROA
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
BWI
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
ILG
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
LYH
ENTER ONE THREE-LETTER STATION CODE, XXX
ENTER 'XXX' TO STOP
XXX
R
```

```
TYPE FORREV.DA
WBC
WBC
ROA
BWI
ILG
LYH
R
```

Figure 2. Sample interactive run of program SETUP at the Dasher. The user enters site identifier (ccc) and station codes (xxx) to be placed in data file FORREV.DA.

MAIN PROGRAM

FORREV

SUBROUTINES

RDFIL

RDSWCH

RP ——— [CKEY
NAFREAD ——— AFDTIM ——— DCMPR
IUANDEC

UPCYC ——— [CALCYC
CONVERT

SETOUT

OPNVER ——— RVRDR

RIVT ——— [DATEDAY ——— YMMDAY
HOLIDAY ——— EQUIVDY

LFPOUT ——— CKEY

CHKPROD ——— [NAFREAD ——— AFDTIM ——— DCMPR
STRING

TIMLN ——— [NAFREAD ——— AFDTIM ——— DCMPR
STRING

TXTDRV ——— FNDPER ——— [NAFREAD ——— AFDTIM ——— DCMPR
STRING

EOPROD ——— STRING

GPRV ——— NAFREAD ——— AFDTIM ——— DCMPR

——— [SDAY ——— [STRING
HCHK ——— STRING

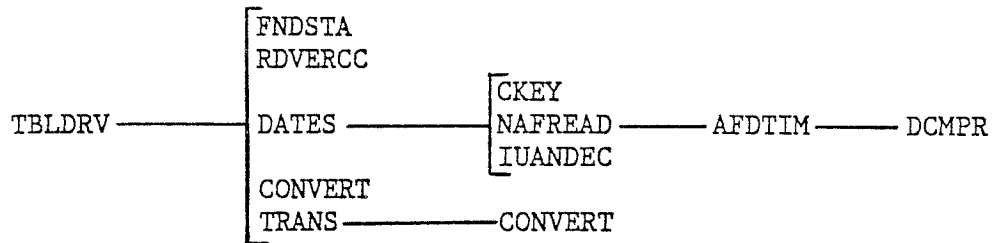
FNDDAY ——— HCHK ——— STRING

——— SRCHLN ——— [STRING
GETN

——— GETN

BLKLN ——— STRING

Figure 3. Software structure and load line for program FORREV
(continued on next page).



LOAD LINE

RLDR FORREV RP RDFIL RDSWCH SETOUT OPNVER RVRDR RIVT CALCYC UPCYC
YMMDAY EQUIVDY DATEDAY CKEY AFDTIM NAFREAD LFPOUT CHKPROD TIMLN DCMPR
STRING RNDPER EOPROD GPRV GETN HCHK SDAY SRCHLN FNDDAY BLKLN HOLIDAY
TXTDRV FNDSTA RDVERCC DATES TRANS CPTYP CONVERT IUANDEC TBLDRV BG.LB
UTIL.LB FORT.LB SYS.LB AFOSE.LB

Figure 3. (continued).

EXFMCPRUN
TTAAS0 KEXF 231155

ENTER DATE OF FORECAST REVIEW: (MMDDYY) []
ENTER TIME INDICATOR: (NIGHT=N, DAY=D) []
ENTER STATIONS: (XXX) [] [] []

Figure 4. This is the pre-execution preformat cccRUNREV which is edited prior to a run of program FORREV. The user enters the date, time of day, and stations for which to produce the forecast review.

1115 AM EDT MON SEP 29 1986

1000 AM EDT MON SEP 29 1926

330 AM EDT MON SEP 29 1986

900 PM EDT SUN SEP 28 1986

400 PM EDT SUN SEP 28 1986

10 AM EDT SUN SEP 28 1986

S

18

ATLTBLREV
TTAA00 KEXF 291317

FORECAST REVIEW: 05 / 28 / 87 DAY

ATL PROJECTION	FORECASTER NUMBER	TEMPERATURE		POPT		POP	
		WSFO	MOS	WSFO	MOS	WSFO	MOS
12-24	24	90	89	L	L	30	20
24-36	23	88	90	L	L	20	05
36-48	32	90	89	L	L	10	05
48-60	23	89	91				
OBSERVED:		MAX : 87		PRECIP: L		AMT: 00.02	
AVG CLD COVER: SCT WIND OBS: 1407 WIND PK: 1308							
PRECIP TYPE: Z-FREEZING F-FROZEN L-LIQUID							

PAGE

Figure 6. Sample output product cccTBLREV, from program FORREV. The product shown here contains forecast and observed data for May 28, 1987 - daytime. For four projections, values of MOS and WSFO forecast temperature, precipitation type, and probability of precipitation are given, along with observed values of temperature, precipitation type and amount, cloud cover, and wind characteristics. The WSFO forecaster number is also provided.

